BOONE COUNTY, KENTUCKY

Boone County is part of the Cincinnati-Hamilton, OH-KY-IN Metropolitan Statistical Area (MSA) and is located to the west of Kenton County, Kentucky, to the north of Grant County, Kentucky, to the northeast of Gallatin County, Kentucky, and to the southwest of Cincinnati, Ohio.

EPA's June 29, 2004 proposal on appropriate designations for Kentucky included Boone County as nonattainment based on the following criteria:

- EPA indicates that Boone County has significant emissions and a large power plant in the County.
- EPA indicates that the population growth and VMT data for Boone County has a potential to contribute to the $PM_{2.5}$ violations in the area.

Emissions Data

In Kentucky's February recommendations, 1999 NEI data was used in the original analysis. As stated in the General Comments portion of this document, EPA had recommended that states use the 1999 since it was the latest available to states at that time.

It is important to note here that EPA, in their review, used the 2001 NEI data, which provided different data than what EPA had recommended that states use. The 2001 NEI data, nor the methodology used in the calculations for that inventory have been made available to states for review.

In EPA's June 29, 2004 letters to states, EPA looked outside the original MSA boundaries to determine if large emissions contributions from adjacent areas were having an impact on $PM_{2.5}$ levels within the MSA. Specifically, in the Cincinnati-Hamilton metropolitan area, EPA has included Montgomery County, Ohio in the analysis for the Cincinnati-Hamilton area and indicates that it too will be nonattainment, despite the fact that Montgomery County, Ohio, is in an entirely different MSA, the Dayton-Springfield MSA.

Hamilton and Clermont Counties in Ohio, and Dearborn County in Indiana contribute 88% of all SO_x within the counties EPA has recommended as nonattainment for $PM_{2.5}$. By comparison, Boone County emits only 6% of SO_x emissions from the counties recommended by EPA as having the potential to impact the violating monitors. A similar comparison can be made with both NO_x and PM. Boone County's NOx and PM emissions stand at 8% of the total EPA recommended areas. In a detailed review of EPA's recommended areas to be designated nonattainment, Boone County ranks consistently less than 8% of

combined emissions contributions within EPA's proposed nonattainment boundaries. See Figures 1-4 below.

Figure 1

NKY Area SOx Emissions in EPA Proposed Nonattainment Counties

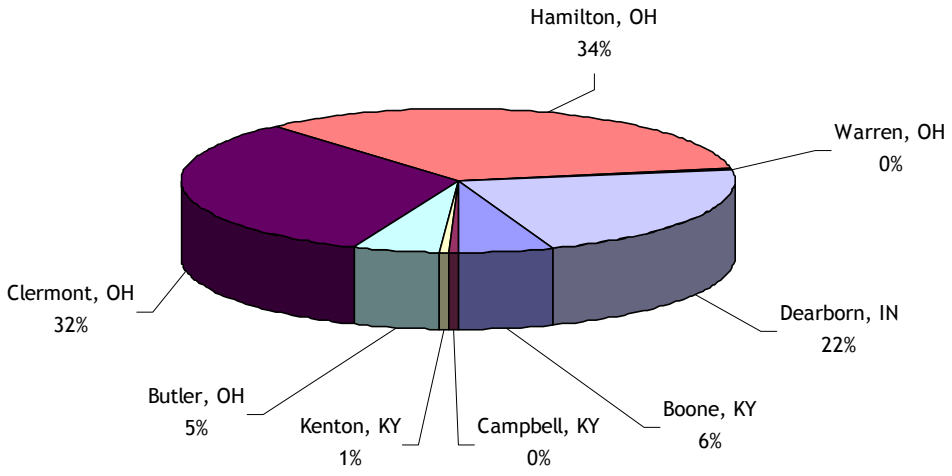


Figure 2

NKY Area NOx Emissions in EPA Proposed Nonattainment Counties

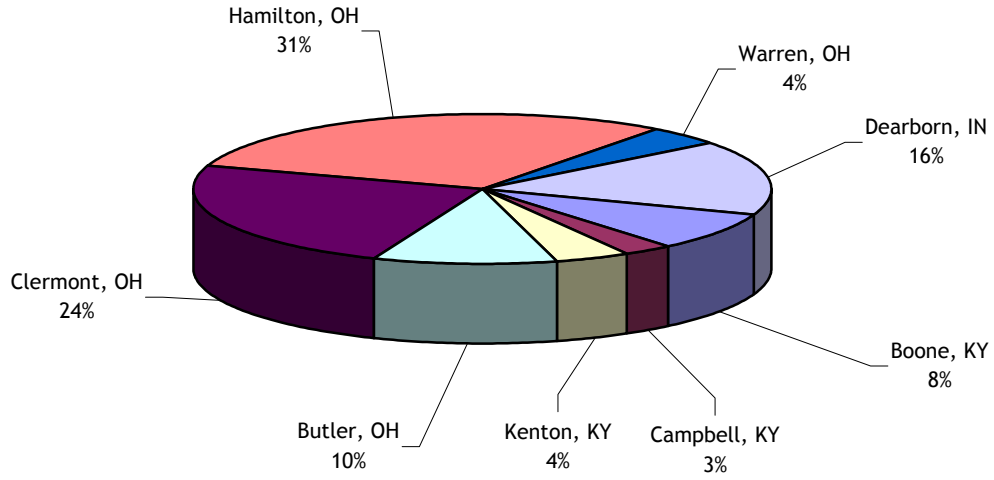


Figure 3

NKY Area PM Emissions in EPA Proposed Nonattainment Counties

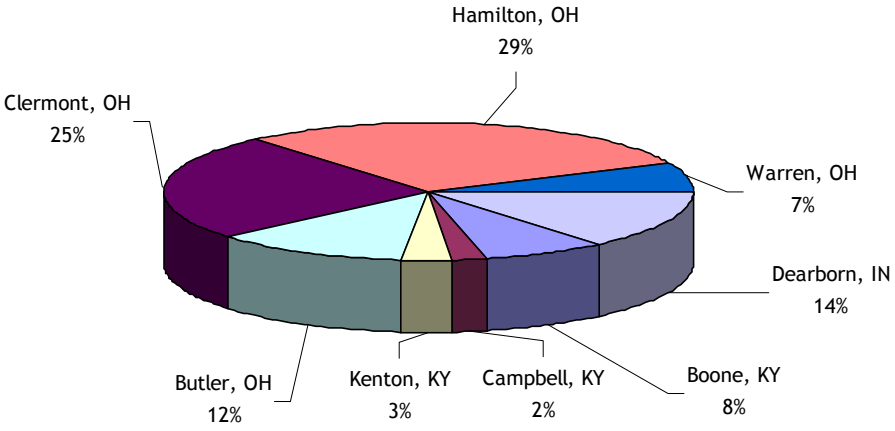
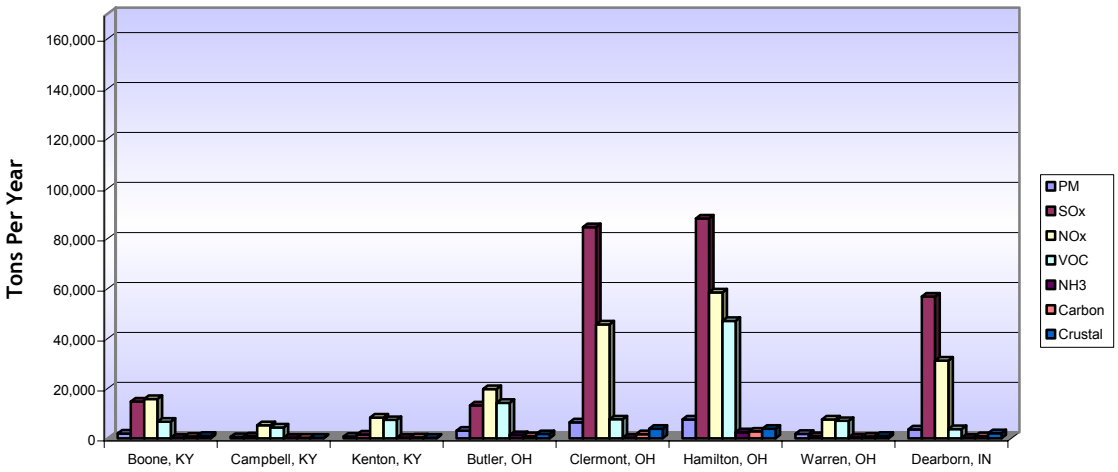


Figure 4

EPA Proposed Nonattainment Counties Emissions 2001



Additional Emission Reductions in Boone County, Kentucky

A factor not taken into account, either in the 1999 nor 2001 NEI data sets, was the implementation of additional NO_x controls at the Cynergy East Bend Power Plant in Boone County. In 2002, NO_x emissions were dropped substantially by the installation of SCR on Unit #2. The operation of this control technology was

responsible for a 2,534-ton reduction in NO_x emissions during the 2003 summer ozone season, which includes the quarters where Kentucky, and the region, typically record the highest $PM_{2.5}$ levels. The implementation of these controls at that facility further reduce the potential emission contribution to monitors in question in Southwestern Ohio.

It is also important to note that the East Bend facility has existing controls to lower emissions of SO_2 and PM.

Additional Regional/National Controls

The implementation of new federal rules to decrease the amount of sulfur in both gasoline and diesel fuel will significantly decrease the amount of SO_2 in the entire area. Because of the Low Sulfur Diesel Rule, in 2007, new clean engines operating on 15-ppm sulfur diesel fuel will reduce NOx emissions by 50%, and reduce PM emissions by more than 90%. Due to the Tier 2 Vehicle and Gasoline Sulfur program, by 2006 average national gasoline sulfur levels will be 90% lower.

Upon implementation of the Clean Air Interstate Rule (CAIR) SO_2 emissions from power plants will be reduced nationwide by 3.6 million tons in 2010 (approximately 40 percent below current levels) and by another 2 million tons per year when the rules are fully implemented (approximately 70 percent below current levels). NOx emissions would be cut by 1.5 million tons nationwide in 2010 and 1.8 million tons annually in 2015 (about 65 percent below today's levels).

The first phase of compliance under the CAIR rule to reduce both SO_2 and NO_x emissions would be required by 2010, allowing substantial emission reductions in the area, by the proposed attainment date for $PM_{2.5}$ nonattainment areas.

Monitoring Data & Trends

As can been seen in Figure 5 below, the speciation data from Kentucky's Covington speciation monitor indicates that sulfate and organic carbon are the major components of the $PM_{2.5}$ values. In Figure 1 above and Figure 6 below, Boone County, Kentucky, contributes only 6% of the SO_2 in the area, and only 8% of the organic carbon (figure 6 below) within EPA's proposed nonattainment counties.

Figure 5

Covington Speciation Data 2001-2003
Average Concentration (µg/m³)

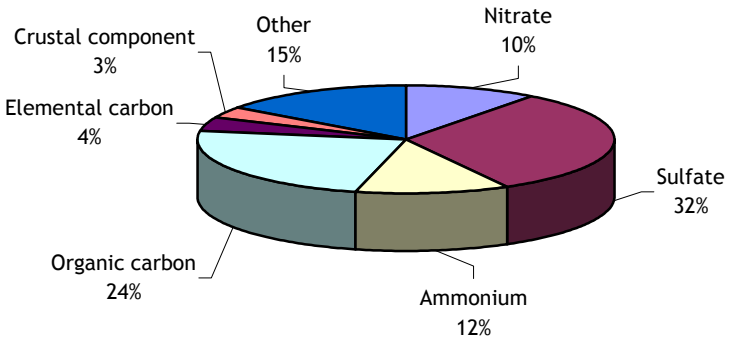
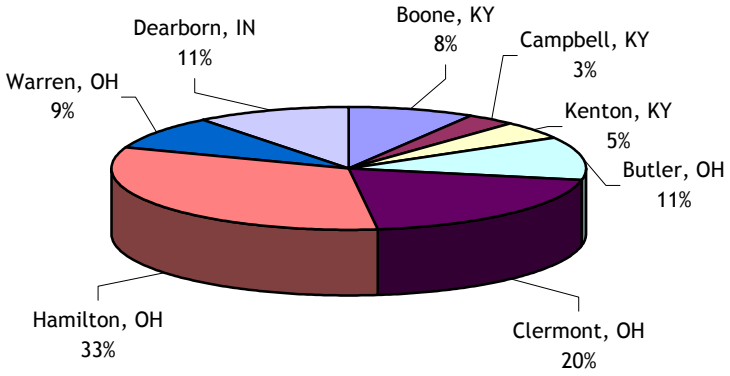


Figure 6

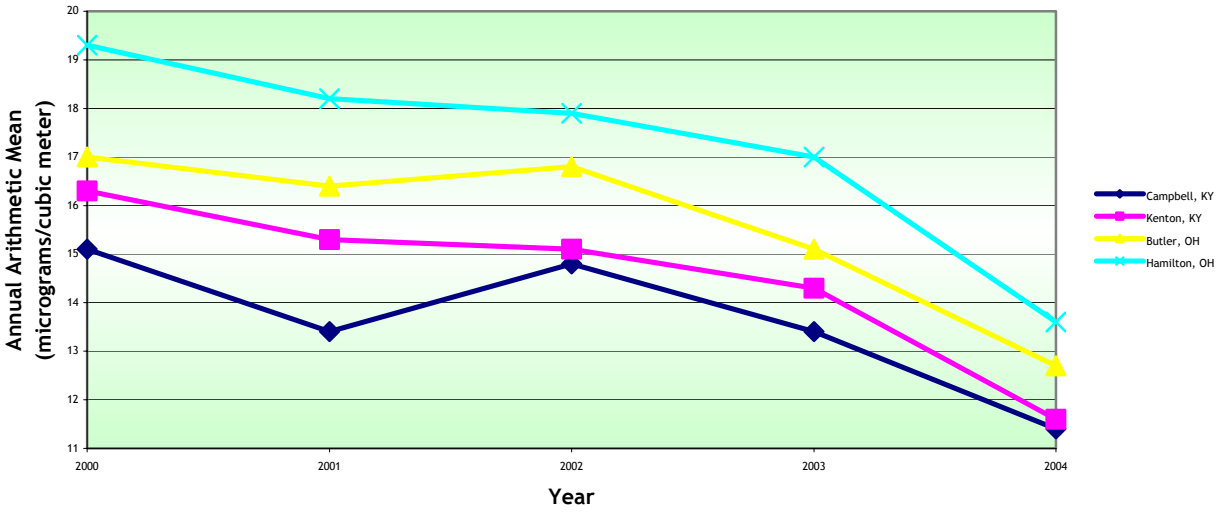
NKY Area Carbon Emissions in EPA Proposed Nonattainment Counties



The monitors located in Campbell and Kenton Counties for the 2001-2003 timeframe show attainment with the standard and the annual concentrations continue to show a downward trend as depicted in Figure 7 below, which utilized data from the year 2000 through April 2004. Monitors in Southwestern Ohio also continue to show comparable downward trends in monitoring values.

Figure 7

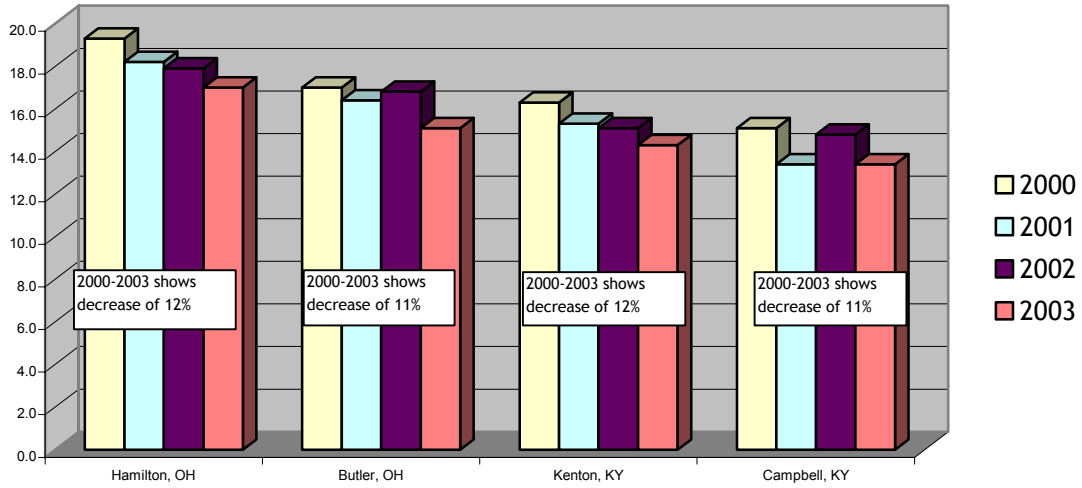
Northern Kentucky Area PM 2.5 Trend



$PM_{2.5}$ levels throughout the entire region have been steadily decreasing over the last four years. Specifically, the $PM_{2.5}$ levels in Campbell County have decreased by 11%, Kenton County's levels have decreased by 12%, 12% in Hamilton County, and 11% in Butler County (See Figure 8 below).

Figure 8

Decline in PM Values for NKY Area

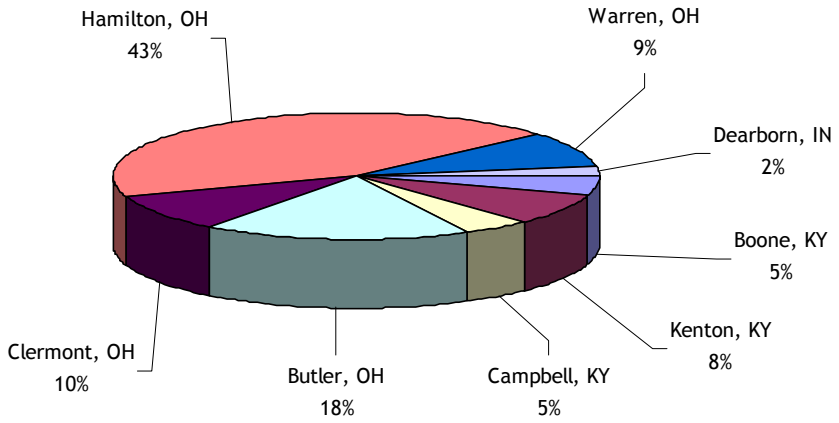


Population Growth and VMT Levels

EPA stated that Boone County had relatively high population growth that had the potential to impact $PM_{2.5}$ violations in the area. Boone County makes up only 5% of the population in the entire MSA, see Figure 9 below.

Figure 9

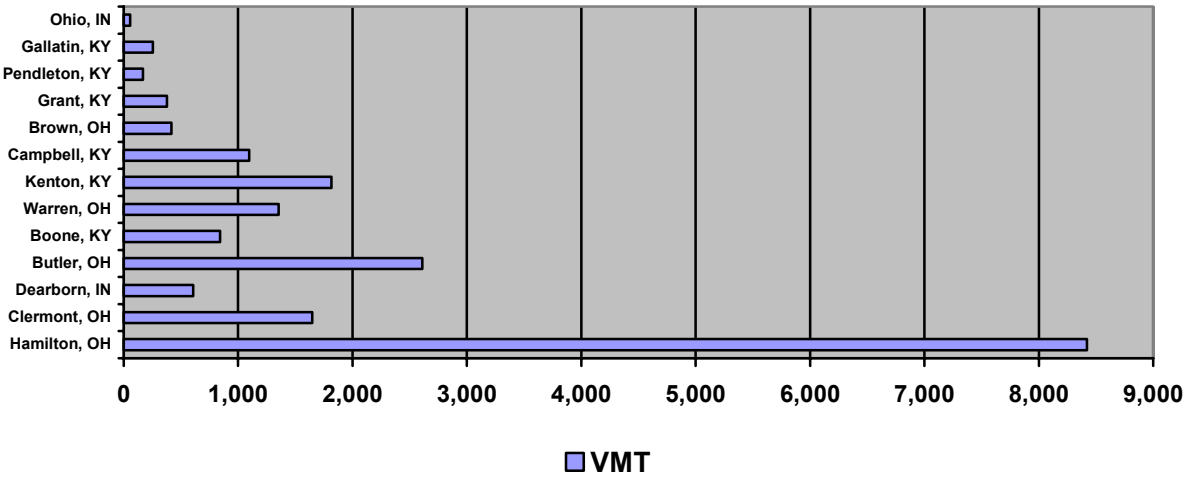
Northern Kentucky Area 2002 Population for USEPA Proposed $PM_{2.5}$ Nonattainment Counties



Therefore, Kentucky believes that the population in Boone County should not be used as a determining factor for potential contributions to $PM_{2.5}$ violations in Southwestern Ohio.

Based on EPA's June 29, 2004, discussion of VMT data in the region, an attempt was made to segregate county VMT data by state rather than reviewing the data for the region as a whole. This is an unfair comparison. Data presented by EPA shows the overwhelming contribution from VMT in the area to be occurring outside of Boone County. Figure 10 below outlines total VMT per county for the MSA.

Figure 10
Cincinnati-Hamilton MSA
VMT per year
in thousands



Conclusions

Based on the factors discussed above, Kentucky believes that Boone County should be designated attainment for the $PM_{2.5}$ standard.

- Kentucky believes that EPA's use of the weighted emissions scoring approach was skewed. A review of actual percentages of emissions contributions to an area shows that Boone County does not have the potential to contribute to $PM_{2.5}$ levels within the region.

- $PM_{2.5}$ levels continue to decline throughout the entire region. From a review of all monitors in the region, an average 12% decline in $PM_{2.5}$ levels has occurred from 2000 through 2003. Every monitor in Kentucky is currently showing values well within attainment of the annual $PM_{2.5}$ standard using 2002 through 2004 data.

- The population growth nor VMT of Boone County is significant enough to have the potential to impact $PM_{2.5}$ levels in the region. Boone County's population actually represents only 5% of the actual MSA. The VMT from Boone County is substantially lower than other counties within the MSA.

- Additional emission reductions on a national and regional level will provide substantial benefits in the region. The anticipated sulfur reductions due to the Low Sulfur Diesel Rule, the Tier 2 Vehicle and

Gasoline Sulfur programs, and the Clean Air Interstate Rule (CAIR) will further lower pollutant levels within this region.

- It appears EPA has included Boone County as a potential nonattainment area due to an emissions contribution from the East Bend power plant. However, a review of the actual percentage of emissions in the entire area, shows that Boone County's contribution pales in comparison to other counties within the proposed nonattainment counties. That facility already has in place existing controls for SO_2, NOx and PM. Including Boone County as nonattainment in order to gain additional controls would serve no purpose.

Based on the above conclusions, Boone County, Kentucky should be designated attainment for the $PM_{2.5}$ standard. To have this county designated nonattainment would invoke additional, substantial, unnecessary requirements on local government planning agencies with little or no benefit to the area.

Substantial local emission reductions from Boone County have already occurred, or will have occurred well before attainment dates for this standard. Drastic emission reductions are scheduled to occur in the mobile sector throughout the next several years that will greatly impact pollutant levels in the area. Couple these changes with those anticipated by the CAIR provisions, which will further reduce SO_x and NO_x emissions within the region, and the air monitoring data demonstrating attainment of the $PM_{2.5}$ Standard, the only conclusion that can be drawn is that Boone County, Kentucky, should be designated attainment for the $PM_{2.5}$ Standard.